

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: PLEASANT LAKE	Lake Area (ha): 199.71
Town: DEERFIELD	Maximum depth (m): 19.8
County: Rockingham	Mean depth (m): 7.0
River Basin: Merrimack	Volume (m ³): 13995000
Latitude: 43°11'25" N	Relative depth: 1.2
Longitude: 71°15'45" W	Shore configuration: 1.44
Elevation (ft): 578	Areal water load (m/yr): 2.48
Shore length (m): 7200	Flushing rate (yr ⁻¹): 0.40
Watershed area (ha): 906.5	P retention coeff.: 0.78
% watershed ponded: 0.0	Lake type: natural w/dam

BIOLOGICAL:

21 February 1997

2 July 1996

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 40%	DINOBRYON 35%
	#2	UROGENOPSIS 25%	ASTERIONELLA 35%
	#3	PERIDINIUM 20%	UROGLENOPSIS 10%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			2.37
DOM. ZOOPLANKTON (% TOTAL)	#1	LRG RND CILIATE SPP 57%	KERATELLA 26%
	#2		CALANOID COPEPOD 20%
	#3		NAUPLIUS LARVA 12%
ROTIFERS/LITER		4	39
MICROCRUSTACEA/LITER		6	45
ZOOPLANKTON ABUNDANCE (#/L)		28	105
VASCULAR PLANT ABUNDANCE			Sparse
SECCHI DISK TRANSPARENCY (m)			6.4
BOTTOM DISSOLVED OXYGEN (mg/L)		15.3	5.2
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 8.1
Hypolimnion volume (m³): 1662000
Anoxic volume (m³): None

CHEMICAL:

Lake: PLEASANT LAKE

Town: DEERFIELD

	21 February 1997		2 July 1996		
DEPTH (m)	5.0	10.0	3.0	8.0	15.0
pH (units)	6.0	5.9	5.8	5.6	5.3
A.N.C. (Alkalinity)	1.6	1.5	1.5	1.7	1.4
NITRATE NITROGEN	< 0.05	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.15	0.15	0.17	0.17	0.23
TOTAL PHOSPHORUS	0.012	0.007	0.007	0.008	0.010
CONDUCTIVITY (μ mhos/cm)	66.4	67.6	69.3	68.8	69.4
APPARENT COLOR (cpu)	< 5	< 5	< 5	6	7
MAGNESIUM			0.77		
CALCIUM			2.1		
SODIUM			9.8		
POTASSIUM			0.49		
CHLORIDE	15	15	14		14
SULFATE	5	5	5		5
TN : TP	13	29	24		23
CALCITE SATURATION INDEX			5.0		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1996

D.O. S.D. PLANT CHL TOTAL CLASS

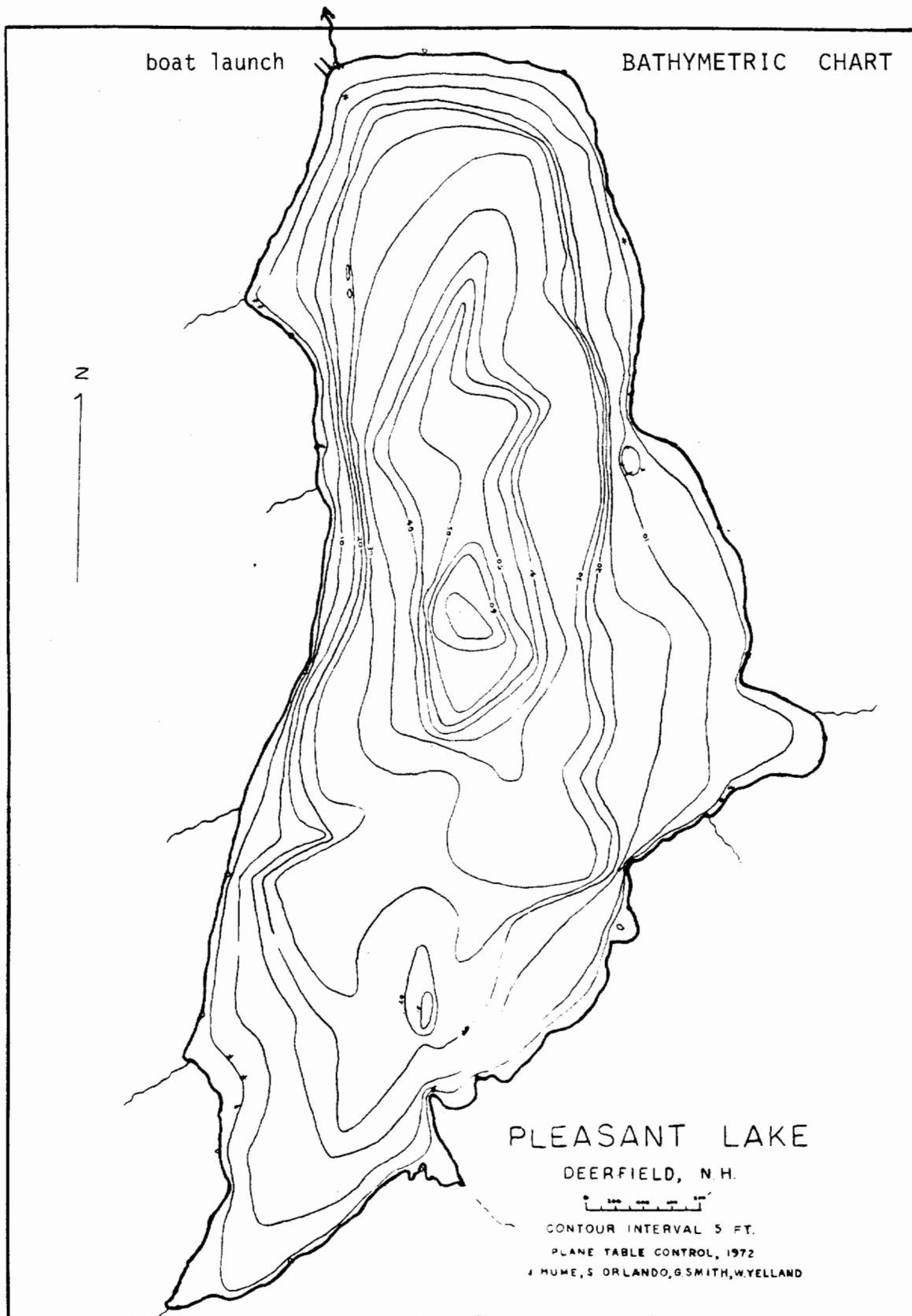
0	1	0	0	1	Oligo.
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COMMENTS:

1. Pleasant Lake was previously surveyed and classified in 1982. There was no change in the assigned class and little change in water quality between the two dates. Chloride and conductivity values were higher in 1996, suggesting additional road-salt runoff.
2. Pleasant Lake's outlet is also sampled each spring and fall as part of DES' acid rain monitoring program initiated in 1983. The data suggests a stable pH trend and a slightly increasing but leveling off in recent years trend in A.N.C.
3. Pleasant Lake has participated in DES' VLAP program since 1989. Data indicate stable to improving trends for chlorophyll and water clarity and contrary trends in surface and bottom phosphorus.
4. Pleasant Lake is a clear water, moderately acidic, oligotrophic lake with >5 mg/L of dissolved oxygen to the bottom (64 feet) and sparse macrophyte growth.

PLEASANT LAKE

DEERFIELD



FIELD DATA SHEET

LAKE: PLEASANT LAKE
DATE: 07/02/96

TOWN: DEERFIELD
WEATHER: SUNNY, HOT, FEW CLOUDS

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	21.5	8.8	97 %
	1.0	20.5	8.8	95 %
	2.0	20.2	8.8	95 %
	3.0	20.0	8.9	96 %
	4.0	19.6	8.9	94 %
	5.0	19.5	8.9	94 %
	6.0	19.2	8.8	93 %
	7.0	18.9	8.8	91 %
	8.0	16.0	10.2	103 %
	9.0	13.2	10.4	98 %
	10.0	12.3	9.9	90 %
	11.0	11.2	7.6	68 %
	12.0	10.9	7.0	62 %
	13.0	10.8	6.6	58 %
	14.0	10.5	6.3	55 %
	15.0	10.3	5.3	47 %
	16.0	10.2	5.2	46 %
	17.0	10.2	5.2	46 %
	18.0	10.2	5.2	46 %
	19.0	10.2	5.2	46 %

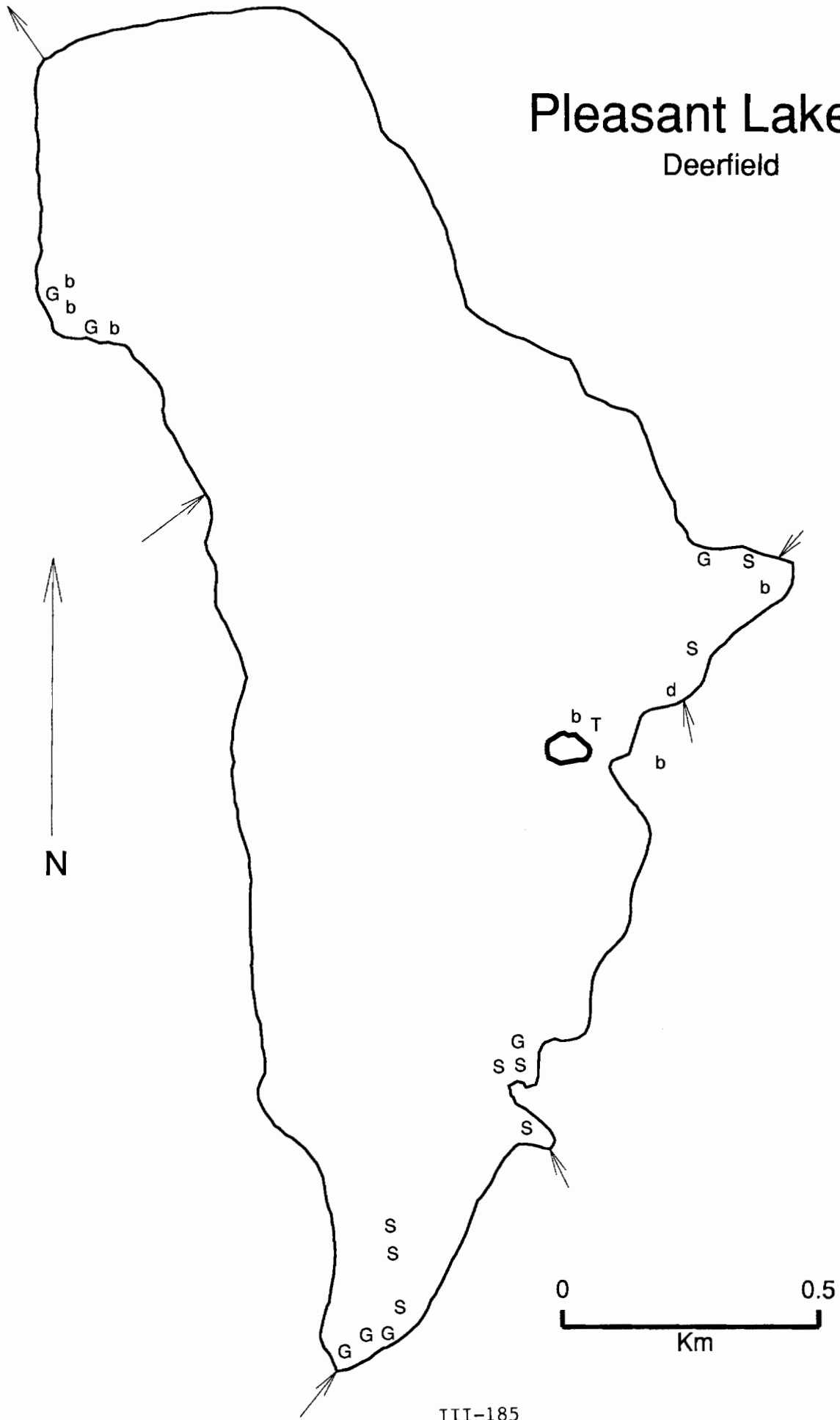
SECCHI DISK (m): 6.4
BOTTOM DEPTH (m): 19.3
TIME: 1130

COMMENTS:

*Dissolved oxygen values are in mg/L

Pleasant Lake

Deerfield



AQUATIC PLANT SURVEY

LAKE: PLEASANT LAKE

TOWN: DEERFIELD

DATE: 07/02/96

[illegible]

OVERALL ABUNDANCE: Sparse

GENERAL OBSERVATIONS:

1. All plants were sparse.
2. Small areas of pipewort were observed; however, they appeared to be dead and covered with filamentous algae and were not listed on the map. Pipewort appeared to be more abundant (but still sparse) in 1982.